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Appellants:	Jeffrey D. Lindsay et al.	Docket No.:	18,587
Serial No.:	10/747,923	Group:	3761
Confirmation No:	7066	Examiner:	Melanie Jo Hand
Filed:	December 29, 2003	Date:	September 22, 2009
For:	NANOFABRICATED GECKO-LIKE FASTENERS WITH ADHESIVE HAIRS FOR DISPOSABLE ABSORBENT ARTICLES		

**Brief on Appeal to the Board of Patent Appeals and Interferences**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 41.37 Appellants respectfully submit this Brief in support of their Appeal of Examiner Hand's **Rejection** of claims 1, 3-5, 7-16 and 20-51 which was mailed on April 22, 2009.

On July 22, 2009, Appellants, pursuant to 37 C.F.R. 41.31 mailed a timely Notice of Appeal. Thus, the time period for filing this Brief ends on September 22, 2009.

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**Real Party in Interest**

The real party in interest is Kimberly-Clark Worldwide, Inc., the assignee of record.

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**Related Appeals and Interferences**

This is the second Appeal for the above-identified patent Application without a Board of Appeals decision. The previous Appeal brief was filed May 14, 2007, after which prosecution was reopened by way of the Office Action dated September 28, 2007. There are no other related appeals and/or interferences with regard to the present Application. There are no other prior and pending appeals, interferences, or judicial proceedings known to Appellants, the Appellants' legal representative, or assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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**Status of Claims**

Claims 1, 3 - 5, 7-16 and 20-68 remain in the application with claims 1, 3 - 5, 7-16 and 20-51 being finally rejected. Claims 52 - 68 were previously withdrawn and claims 2, 6, 17-19 and 69 were previously cancelled. The appealed claims include 1, 3 - 5, 7-16 and 20-51 and appear in the CLAIMS APPENDIX of this Brief.

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**Status of Amendments**

No claim amendments were filed after receiving a final rejection of the pending claims.

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**Summary of Claimed Subject Matter**

The following summary correlates claim elements to specific embodiments described in the application specification, but does not in any manner limit claim interpretation. Rather, the following summary is provided only to facilitate the Board's understanding.

Generally, the present invention is directed to nanofabricated gecko-like fasteners with adhesive hairs for disposable absorbent articles (e.g., page 12-13 and FIGs 1-10B and 12A-12B).

Independent claim 1 is directed to a disposable absorbent article that comprises a nanofabricated attachment means (30) (e.g., page 6 lines 11-13, page 9 lines 1-8, page 20 lines 26-33 and FIGs 5-10B). The nanofabricated attachment means comprises adhesive hairs (32) (e.g., page 6 line 11 to page 7 lines 7 and FIGs 1-4 and 12A-12B). The adhesive hairs are disposed on a flexible substrate (42) (e.g., page 6 lines 11-13, page 8 lines 9-22 and FIGs 1-4 and 12A-12B). The hairs (32) are effective to adhesively engage an opposing surface that comprises a polymeric film or a fibrous web (e.g., page 9 lines 10-22). The attachment means (30) has a packing density of at least 500 hairs per square millimeter (e.g., page 2 lines 16-17). In addition, the hairs (32) do not consist of a spatula (34) or protrusion (44) positioned at a terminal end of the hairs (e.g., page 6 lines 11-18).

Independent claim 5 is directed to a disposable absorbent article that comprises a gecko-like fastener (30,412) (e.g. page 6 lines 11-12, page 9 lines 1-8, page 28 lines 3-5 and FIGs 5-10B). The gecko-like fastener includes a flexible substrate (42) (e.g., page 6 lines 11-13, page 8 lines 9-22 and FIGs 1-4, 9B-9C and 12A-12B). The article includes a plurality of adhesive hairs (32) rising from the substrate (e.g., page 6 line 15 to page 7 lines 7 and FIGs 1-4 and 12A-12B). The adhesive hairs each have a base section, a midsection, a top section, a height of about 0.5 microns to about 8 millimeters, and a diameter greater than about 0.05 microns (e.g., page 2 lines 13-17, page 6 lines 11-23 and FIGs 1-3). In addition, the hairs do not consist of a spatula (34) or protrusion (44) positioned at a terminal end of the top section (40) (e.g., page 6, lines 11-27).

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**Objection to Specification**

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter.

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**Grounds of Rejection To Be Reviewed on Appeal****Ground 1**

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 2003/0044569 to Kacher et al. (hereinafter "Kacher").

**Ground 2**

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Kacher.

**Ground 3**

Claims 4 is rejected under U.S. C. 103(a) as being unpatentable over Kacher.

**Ground 4**

Claims 3, 5, 7-16, 25-30, 33-46 and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim (see PTO-892 form for full citation) (hereinafter "Geim").

**Ground 5**

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claim 5 above, and further in view of WO 03/095190 to Fearing et al. (hereinafter "Fearing").

**Ground 6**

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim and further in view of Fearing as applied to claim 22 above and further in view of Borchardt (John K. Borchardt, Nanotechnology Providing New Composites, REINFORCEDplastics, 36, 36-39, November 2003) (hereinafter "Borchardt").

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#### Ground 7

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claim 5 above and further in view of U.S. Patent No. 6,726,386 to Gruenbacher et al. (hereinafter "Gruenbacher").

#### Ground 8

Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claims 5 and 27 above, and further in view of U.S. Patent No. 4,716,067 to Moji et al. (hereinafter "Moji").

#### Ground 9

Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claim 5 above, and further in view of U.S. Patent No. 5,772,648 to Osborn III et al. (hereinafter "Osborn").

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#### Argument

As Appellants best understand it, Kacher is directed to disposable cleaning sheets for removing debris, especially hair, from a surface, especially soft surfaces such as carpeting or upholstery (Kacher paragraph 0009)(emphasis added). The cleaning sheets comprise a substrate and a plurality of protrusions affixed to the substrate (Id.). The protrusions are selected from the group consisting of hooks, slanted fibers, bristles, and combinations thereof (Id.). Kacher specifically discloses that the protrusion shapes are J-type hooks, prong-type hooks, mushroom-type hooks, banana-type hooks, Y-type hooks, multi-tipped hooks and the like (Kacher paragraph 0021-0027, 0054, 0066, 0095 and Figs. 7-13)(note that Fig. 13 is a front view of a J-type hook). Kacher teaches that in some embodiments, VELCRO hooks can provide a suitable protrusion for the invention (Kacher paragraph 0108). The cleaning sheet is particularly useful to remove debris from a surface (Kacher paragraph 0062). Importantly, the cleaning sheets are contacted to the surface to be cleaned, preferably by moving or

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wiping the cleaning sheet across the surface, the protrusions of the present cleaning sheets are capable of dislodging debris from the surface, removing the debris from the surface, and retaining the debris on the cleaning sheet (Kacher paragraph 0068)(emphasis added). Some embodiments include "gliders" to help ensure the ability of the cleaning sheets to move or wipe across a surface (Kacher paragraph 0150-0151). The cleaning sheets can be attached to a cleaning implement through use of grippers, a conventional hook-and-loop system or glue, for example (Kacher paragraph 0155 and 0162). However, it is important to note that where protrusions are located on one side of the cleaning sheet, the surface of the cleaning sheet that is attached to the cleaning implement is not the surface that comprises the protrusions discussed above (see e.g., Kacher paragraph 0061, 0148-0155 and Fig. 21).

In comparison, the present invention generally is directed to disposable articles having nanofabricated gecko-like fasteners with adhesive hairs for disposable absorbent articles (e.g., page 12-13 and FIGs 1-10B and 12A-12B). The fastener includes a flexible substrate (e.g., page 6 lines 11-13, page 8 lines 9-22 and FIGs 1-4, 9B-9C and 12A-12B). The fastener also includes a plurality of adhesive hairs (or setae) rising from the substrate (e.g., page 6 line 15 to page 7 lines 7 and FIGs 1-4 and 12A-12B). In addition, the hairs do not consist of a spatula (34) or protrusion (44), such as a hook for example, positioned at a terminal end of the top section (e.g., page 6 lines 11-27 and Figs. 1-4). In contrast to Kacher, the fastener of the present invention is not intended to have the ability to wipe or move across a surface, but rather the opposite, it is intended to fasten or secure at least a portion of the article as a replacement for conventional fasteners, such as glue or hook-and-loop systems (see e.g., page 1 lines 3-20, page 2 lines 11-17, page 5 lines 16-33, and page 9 lines 10-11).

1. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 2003/0044569 to Kacher et al. (hereinafter "Kacher").

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegall Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987); M.P.E.P. § 2131. In addition, "[t]he elements must be arranged as required by the claim." M.P.E.P. § 2131 referencing *In re Bond*, 910 F.2d 831 (Fed. Cir. 1990); see also *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Also, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." M.P.E.P. § 2131 (citing *Richardson*, 868 F.2d at 1236 (Fed. Cir. 1989)). Appellants respectfully submit that the Examiner's rejection is improper and should be reversed because Kacher does not set forth each and every element of the claims.

With respect to claim 1, the Examiner states that Kacher discloses an absorbent material

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comprising a nanofabricated attachment means comprising adhesive hairs in the form of slanted fiber protrusions having adhesive coated thereon, citing Kacher 0054 and 0116 for alleged support (Office Action dated April 22, 2009, page 3). However, Kacher 0054 merely discloses the need for a hook located at the end of the protrusion of Kacher, along with a description of the hook thereof, and Kacher 0116 describes the orientation of the protrusions into at least one row. Contrary to the Examiner's contention, these citations do not provide disclosure of a nanofabricated attachment means comprising adhesive hairs (setae).

The Examiner also states that Kacher discloses that the protrusions adhesively engage an opposing surface comprising polymeric film or a fibrous web such as a carpet, citing paragraph 0063 for alleged support. However, Kacher is replete with disclosures that the cleaning wipes of Kacher are not intended to adhesively engage (i.e., affix or attach to) the item to be cleaned, but rather, it is critical to the performance of the cleaning wipe of Kacher to have the ability to slide or wipe across the surface. For example, Kacher discloses that "the protrusions are chosen such that they do not snag or get caught in the fibers of the surface" (Kacher paragraph 0053. See also Kacher paragraph 0068, 0069, 0116 and 0150-0151).

The Examiner also states that Kacher discloses that the protrusions of Kacher do not consist of a spatula or protrusion positioned at a terminal end, such as seen in figure 8 of Kacher. However, figure 8 of Kacher clearly shows a structure on the terminal end in the form of a Prong-type hook (Kacher paragraph 0022).

For at least these reasons, this rejection of claim 1 under 35 U.S.C. §102(e) has been overcome. Appellants respectfully request that the Board reverse this rejection.

2. Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Kacher.

Claim 1 is patentable under 35 U.S.C. 102(a) for at least the same reasons as discussed above with respect to 35 U.S.C. 102(e). For at least these reasons, this rejection of claim 1 under 35 U.S.C. §102(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

3. Claims 4 is rejected under U.S. C. 103(a) as being unpatentable over Kacher.

Without addressing the merits of the Examiner's argument directed to average adhesive force per hair, it is respectfully submitted that claim 4 depends on independent claim 1, and therefore includes all of the limitations of claim 1.<sup>1</sup> For the reasons stated above with respect to claim 1, Kacher

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<sup>1</sup> It is respectfully noted that the Examiner's calculation is incorrect with respect to attachment force. It appears that the Examiner obtains the "600 g" attachment force from the Abstract and claim 23 of Kacher. However, this

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does not disclose all of the limitations of claim 1, and thus does not disclose all of the claim limitations of claim 4 either.

In addition, the Examiner states that "while Kacher does not explicitly disclose a sample area or total area for the cleaning sheet upon which the attachment force value is based and thus does not explicitly disclose attachment force per hair, it would be obvious to one of ordinary skill in the art to modify the attachment force such that the force per area for an area equal to the glide resistance sample area is at most 405 mN/hair with a reasonable expectation of success" (Office Action dated April 22, 2009, page 6). In response, appellants respectfully submit that such statement is merely the Examiner's opinion. The Examiner has not provided evidence or a reason that modifying the invention of Kacher in an attempt to arrive at the present invention would be obvious. In addition, the Examiner has not shown that the property of "glide resistance" would directly correspond to the adhesive force of the present invention.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 4, and this rejection of claim 4 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

4. Claims 3, 5, 7-16, 25-30, 33-46 and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim (see PTO-892 form for full citation) (hereinafter "Geim").

Appellants respectfully submit that the requirements of MPEP §2142 and §2143 are not present, as the Examiner has not shown that Kacher, in view of Geim, teaches or suggests all of the claim limitations to arrive at Appellants' recited invention. In particular, as presented in claims 3, 5, 7-16, 25-30, 33-46 and 49-51 each claim contains at least one element not found in the cited reference. In addition, Geim teaches away from Kacher.

Claim 3

It is respectfully submitted that claim 3 depends on independent claim 1, and therefore includes all of the limitations of claim 1. For the reasons stated above with respect to claim 1, Kacher does not disclose all of the limitations of claim 1, and thus does not disclose all of the claim limitations of claim 3 either.

In addition, the Examiner states that Kacher does not disclose a diameter for the fibers, but Geim discloses a gecko-like attachment means comprising adhesive hairs having an average diameter

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particular attachment force is directed to the attachment of the cleaning sheet to a cleaning implement which, as paragraphs 0061, 0148-0155 and Fig. 21 clearly disclose, is obtained by use of conventional fastening systems, such as grippers, hook-and-loop or glue, not by the "protrusions" of Kacher.

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of 0.2-4 microns (Office Action dated April 22, 2009, page 6). However, Kacher paragraphs 0078-0079 disclose specific diameters of the protrusion stem, which appear to be greater than those of Geim. Thus, Kacher clearly teaches away from Geim, and the modification of Kacher by Geim would therefore render the invention of Kacher unsatisfactory for its intended purpose. According to MPEP § 2143.01(V), if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification (In re Gordon, 733 F.2d 900 (Fed. Cir. 1984)).

The Examiner also states that Kacher does not disclose an average height-to-diameter ratio of about three or greater, but that upon modification of the article of Kacher such that the hairs have a diameter as disclosed by Geim the height kept constant at the value disclosed by Kacher, the average height to diameter ratio is about three or greater. However, as discussed above, such a modification would render the invention of Kacher unsatisfactory for its intended purpose.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 3, and this rejection of claim 3 under 35 U.S.C. 103(a) has been overcome.

#### Claim 5

With respect to claim 5, the Examiner states that Kacher discloses an absorbent article in the form of a cleaning sheet having a nonwoven substrate comprising an adhesive fastener including a flexible substrate, a plurality of adhesive hairs in the form of slanted fiber protrusions having adhesive coated thereon, and having a base section, midsection and top section, citing Kacher 0054, 0074, 0116 and figure 7 for alleged support (Office Action dated April 22, 2009, page 6-7). However, Kacher 0054 merely discloses the need for a hook located at the end of the protrusion of Kacher, along with a description of the hook thereof, and Kacher 0116 describes the orientation of the protrusions into at least one row. Contrary to the Examiner's contention, none of the citations provide disclosure of a nanofabricated attachment means comprising adhesive hairs (setae). In addition, the Examiner has not shown that Kacher discloses a gecko-like adhesive fastener. To the contrary, the Examiner admits that Kacher is directed to a cleaning sheet (Id.). One of ordinary skill in the art would readily recognize that a cleaning sheet would not also be a fastener. To support this contention, Kacher is replete with disclosures that the cleaning wipes of Kacher are not intended to adhesively engage (i.e., affix or attach to) the item to be cleaned, but rather, it is critical to the performance of the cleaning wipe of Kacher to have the ability to slide or wipe across the surface. For example, Kacher discloses that "the protrusions are chosen such that they do not snag or get caught in the fibers of the surface" (Kacher paragraph 0053. See also Kacher paragraph 0068, 0069, 0116 and 0150-0151).

The Examiner also states that Kacher discloses that the protrusions of Kacher do not consist of a spatula or protrusion positioned at a terminal end, such as seen in figure 8 or figure 10 of Kacher.



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However, figures 8 and 10 of Kacher clearly show a structure on the terminal end in the form of a hook (Fig. 8) or a protrusion (Fig. 10) (Kacher paragraph 0022 and 0024).

In addition, the Examiner states that Kacher does not disclose a diameter for the protrusions within the claimed range, but that Geim discloses a gecko-like attachment means comprising adhesive hairs having an average diameter of 0.2-4 microns (Office Action dated April 22, 2009, page 6). However, Kacher paragraphs 0078-0079 disclose specific diameters of the protrusion stem, which appear to be greater than those of Geim. Thus, Kacher clearly teaches away from Geim, and the modification of Kacher by Geim would therefore render the invention of Kacher unsatisfactory for its intended purpose. According to MPEP § 2143.01(V), if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification (*In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)).<sup>2</sup>

Furthermore, it appears that the Examiner is utilizing ***impermissible hindsight***. The Court in KSR held that a factfinder should be aware of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning (KSR, 127 S.Ct., at 1742). It seems clear that the Examiner is utilizing the teachings of Appellants in an attempt to modify Kacher with Geim to allegedly arrive at Appellants' invention. Appellants respectfully note that M.P.E.P. §§ 2142 and 2143 require that the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Appellants' disclosure. *In re Vaæck*, 947 F.2d 4899 (Fed. Cir. 1991). The mere fact that the prior art may be modified in the manner suggested by the Office does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127. *In re Fritch*, 23 USPQ 2d 1780, 1783-1784 (Fed. Cir. 1992). It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Gorman*, 933 Fed. 2nd 982, 987, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991). *In re Fritch*, 23 USPQ 2d 1780 at 1784 (Fed. Cir. 1992). The Court in KSR held that a patent composed of several elements is not proved obvious merely by demonstrating that each of the elements was, independently, known in the prior art (KSR, 127 S.Ct., at 1741). The Court further emphasized the importance of ***identifying a reason*** that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does, which the Examiner has not provided (*Id.*, emphasis added). In fact, it is respectfully submitted that Kacher teaches away from Geim, as

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<sup>2</sup> The Court in KSR has held that "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 416 (2007). However, "it can be important to identify a reason that would've prompted a person of ordinary skill in the relevant field to combine the documents in the way acclaimed new invention does. . . because conventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost a necessity will be combinations of what, in some sense, is already known." *Id.* at 418-419.

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discussed above. Thus, any suggestion by the Examiner to modify Kacher with Geim based on the knowledge gained from Appellants is improper.

The Examiner may state that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from Appellants' disclosure. However, as discussed above, the Examiner has not shown that Appellants' claimed invention was within the level of ordinary skill at the time the claimed invention was made based on the references cited by the Examiner, particularly since the references do not teach or suggest all of the elements of the claimed invention.<sup>3</sup> For at least these reasons, the Examiner has improperly used hindsight in an attempt to arrive at Appellants' invention.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 5, and this rejection of claim 5 under 35 U.S.C. 103(a) has been overcome.

#### Claims 7-16 and 25-30

Dependent claims 7-16 and 25-30 are patentable for at least the same reasons as independent claim 5. Thus, this rejection of claims 7-16 and 25-30 under 35 U.S.C. 103(a) has been overcome.

#### Claim 33

Dependent claim 33 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "Kacher discloses a scrim made of a copolymer of polyethylene and polypropylene which by its nature [is] a thermoplastic elastomeric material" (Office Action dated April 22, 2009, page 10). However, the Examiner has not provided evidence that the particular polyethylene and polypropylene utilized by Kacher is in fact an elastomeric material. The Examiner cites Kacher paragraph 0048 for alleged support of such contention. However, paragraph 0048 make no mention of the material being elastomeric. Thus, the statement that a copolymer of polyethylene and polypropylene is by its nature a thermoplastic elastomeric material is merely the Examiner's unsupported opinion.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 33, and this rejection of claim 33 under 35 U.S.C. 103(a) has been overcome.

#### Claim 34

Dependent claim 34 is patentable for at least the same reasons as independent claim 5. In

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<sup>3</sup> It is noted that the Examiner may cite In re McLaughlin, which is a 1971 CCPA ruling, as support for the law regarding the improper use of hindsight. However, Appellants respectfully note that KSR v. Teleflex is a 2007 U.S. Supreme Court ruling which is precedential over In re McLaughlin.

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addition, the Examiner states that "The substrate disclosed by Kacher is substantially elastic because of the presence of the elastomeric scrim material" (Office Action dated April 22, 2009, page 11). However, the Examiner has not provided evidence that the scrim material utilized by Kacher is in fact an elastomeric material. The Examiner cites Kacher paragraph 0048 for alleged support of such contention. However, paragraph 0048 make no mention of the material being elastomeric. Thus, the statement is merely the Examiner's unsupported opinion.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 34, and this rejection of claim 34 under 35 U.S.C. 103(a) has been overcome.

#### Claims 35 and 36

Dependent claims 35 and 36 are patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "The substrate of Kacher contains discrete elastic regions separated by less elastic regions where the less elastic regions are defined by those regions to which the rows of fastener material are attached inasmuch as the bonding points as well as the less elastic polyamide material of the fastener render those regions inelastic" (Office Action dated April 22, 2009, page 11). However, the Examiner has not provided any evidence or citation support from Kacher for this contention. Thus, the statement is merely the Examiner's unsupported opinion.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claims 35 and 36, and this rejection of claims 35 and 36 under 35 U.S.C. 103(a) has been overcome.

#### Claim 37

Dependent claim 37 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "The fastener of Kacher, made of nylon material, is stretchable inasmuch as nylon is a stretchable material" (Office Action dated April 22, 2009, page 11). However, the Examiner has not provided evidence that the nylon material utilized by Kacher is in fact a stretchable material. The Examiner cites Kacher paragraph 0046 for alleged support of such contention. However, paragraph 0046 make no mention of nylon material being stretchable. Thus, the statement is merely the Examiner's unsupported opinion.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 37, and this rejection of claim 37 under 35 U.S.C. 103(a) has been overcome.

#### Claim 38

Dependent claim 38 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "the fastener material may be made of thermoplastic material such as styrene-isoprene block copolymer, which is by its nature an elastic material" (Office Action dated

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April 22, 2009, page 11). However, the Examiner has not provided evidence that the styrene-isoprene black copolymer material utilized by Kacher is in fact an elastic material. The Examiner cites Kacher paragraph 0057 for alleged support of such contention. However, paragraph 0057 make no mention of the material being elastic. Thus, the statement is merely the Examiner's unsupported opinion.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 38, and this rejection of claim 38 under 35 U.S.C. 103(a) has been overcome.

#### Claim 39

Dependent claim 39 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "The attachment surface of said fastener disclosed by Kacher is elastic inasmuch as the protrusions/hairs are also made of SIS, which is elastic by nature " (Office Action dated April 22, 2009, page 11). However, the Examiner has not provided evidence that the SIS material utilized by Kacher is in fact an elastic material. The Examiner cites Kacher paragraph 0057 for alleged support of such contention. However, paragraph 0057 make no mention of the material being elastic. Thus, the statement is merely the Examiner's unsupported opinion.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 39, and this rejection of claim 39 under 35 U.S.C. 103(a) has been overcome.

#### Claim 40

Dependent claim 40 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "The fastener of Kacher includes protrusions that can be a combination of hooks and loops which are complementary fastener elements and therefore the fastener is adapted for fastening set article to itself ", citing paragraph 0054 for alleged support (Office Action dated April 22, 2009, page 11-12). However, paragraph 0054 only discloses hooks, not loops. Thus, this statement by the Examiner is incorrect.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 40, and this rejection of claim 40 under 35 U.S.C. 103(a) has been overcome.

#### Claim 41

Dependent claim 41 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "The fastener is adapted for fastening said article to another object, namely a mop head ", citing figure 21 for alleged support (Office Action dated April 22, 2009, page 12). However, the Examiner is confusing the surface of the cleaning sheet having protrusions with the surface of the cleaning sheet that is attached to a cleaning implement. Indeed, Kacher discloses that the cleaning sheets can be attached to a cleaning implement through use of grippers, a conventional hook-and-loop system or glue, for example (Kacher paragraph 0155 and 0162). The surface having

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protrusions must be located on the outer surface in order for the invention to work. Thus, this statement by the Examiner is incorrect.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 41, and this rejection of claim 41 under 35 U.S.C. 103(a) has been overcome.

#### Claim 42

Dependent claim 42 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that "The fastener of Kacher is adapted [] for joining to itself and is thus necessarily also adapted or joining two or more components of said article, e.g. the two opposing ends of the article" (Office Action dated April 22, 2009, page 12). However, the Examiner provides no support for this contention, and as appellants best understand it, Kacher does not disclose such contention. Thus, this statement by the Examiner is incorrect.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 42, and this rejection of claim 42 under 35 U.S.C. 103(a) has been overcome.

#### Claim 43

Dependent claim 43 is patentable for at least the same reasons as independent claim 5. In addition, the Examiner states that adding more rows of protrusions would meet the claim limitations of claim 43 (Office Action dated April 22, 2009, page 12). However, the Examiner once again appears to be confusing the surface of the sheet having protrusions (as well as the function of the protrusions for cleaning purposes) and the opposite surface of the sheet which is used for attachment to a cleaning implement. The protrusions of Kacher are not designed as a fastener, but rather as a cleaning material that must have the ability to slide across the surface that is being cleaned. Thus, this statement by the Examiner is incorrect.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 43, and this rejection of claim 43 under 35 U.S.C. 103(a) has been overcome.

#### Claims 44-51

Dependent claims 44-51 are patentable for at least the same reasons as independent claim 5. For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 44-51, and this rejection of claim 44-51 under 35 U.S.C. 103(a) has been overcome.

#### Conclusion of this rejection

For at least these reasons, this rejection of claims 3, 5, 7-16, 25-30, 33-46 and 49-51 under 35 U.S.C. §103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

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5. Claims 20-22 are rejected under 35 U.S.C.103(a) as being unpatentable over Kacher in view of Geim as applied to claim 5 above, and further in view of WO 03/095190 to Fearing et al. (hereinafter "Fearing").

Dependent claims 20-22 are patentable for at least the same reasons as independent claim 5. In addition, the Examiner alleges that Geim and Fearing are directed to fastening devices (Office Action dated April 22, 2009, page 14-15). However, Kacher is directed to a cleaning device, not a fastener, and Kacher is replete with disclosures that the cleaning sheets of Kacher are not intended to adhesively engage (i.e., affix or attach to) the item to be cleaned, but rather, it is critical to the performance of the cleaning sheet of Kacher to have the ability to slide or wipe across the surface. For example, Kacher discloses that "the protrusions are chosen such that they do not snag or get caught in the fibers of the surface" (Kacher paragraph 0053. See also Kacher paragraph 0068, 0069, 0116 and 0150-0151). Thus, Kacher clearly teaches away from Geim and Fearing, and the modification of Kacher by Geim and Fearing would therefore render the invention of Kacher unsatisfactory for its intended purpose. According to MPEP § 2143.01(V), if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification (In re Gordon, 733 F.2d 900 (Fed. Cir. 1984).

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claims 20-22, and this rejection of claims 20-22 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim and further in view of Fearing as applied to claim 22 above and further in view of Borchardt.

Dependent claims 23 is ultimately dependent on independent claim 5, and is therefore patentable for at least the same reasons as independent claim 5. In addition, the Examiner in the rejection of claim 22 alleges that Geim and Fearing are directed to fastening devices (Office Action dated April 22, 2009, page 14-15). However, Kacher is directed to cleaning device, not a fastener, and Kacher is replete with disclosures that the cleaning sheets of Kacher are not intended to adhesively engage (i.e., affix or attach to) the item to be cleaned, but rather, it is critical to the performance of the cleaning sheet of Kacher to have the ability to slide or wipe across the surface. For example, Kacher discloses that "the protrusions are chosen such that they do not snag or get caught in the fibers of the surface" (Kacher paragraph 0053. See also Kacher paragraph 0068, 0069, 0116 and 0150-0151). Thus, Kacher clearly teaches away from Geim and Fearing, and the modification of Kacher by Geim and Fearing would therefore render the invention of Kacher unsatisfactory for its intended purpose.

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Furthermore, the Examiner has not provided a reason why one of ordinary skill in the art would combine Borchardt, Fearing and Geim with Kacher.<sup>4</sup>

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 23, and this rejection of claim 23 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claim 5 above and further in view of U.S. Patent No. 6,726,386 to Gruenbacher et al. (hereinafter "Gruenbacher").

Dependent claim 24 is patentable for at least the same reasons as independent claim 5. For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claim 24, and this rejection of claim 24 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

8. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claims 5 and 27 above, and further in view of U.S. Patent No. 4,716,067 to Moji et al. (hereinafter "Moji").

Dependent claims 31 and 32 are patentable for at least the same reasons as independent claim 5. For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claims 31 and 32, and this rejection of claims 31 and 32 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

9. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kacher in view of Geim as applied to claim 5 above, and further in view of U.S. Patent No. 5,772,648 to Osborn III et al. (hereinafter "Osborn").

Dependent claims 47 and 48 are patentable for at least the same reasons as independent claim 5. In addition, the Examiner adds Osborn to an already extensive list of references for the purpose of teaching the use of release liner. However, since it is critical to Kacher that the cleaning sheet surface

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<sup>4</sup> The Court in KSR has held that "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 416 (2007). However, "it can be important to identify a reason that would've prompted a person of ordinary skill in the relevant field to combine the documents in the way acclaimed new invention does. . . because conventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost a necessity will be combinations of what, in some sense, is already known." *Id.* at 418-419.

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having the protrusions have the ability to slide or wipe across a surface, one of ordinary skill in the art would readily recognize that such release liner would likely not stick to the protrusions of Kacher. Thus, Kacher teaches away from both Geim and Osborn.

For at least these reasons, the Examiner has not provided a prima facie case of obviousness with respect to claims 47 and 48, and this rejection of claims 47 and 48 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board reverse this rejection.

#### 10. Objection to Specification

The Examiner has objected to the specification as allegedly failing to provide proper antecedent basis for the claimed subject matter. More particularly, the Examiner states that the only place that the term "a protrusion" is found in the disclosure is in reference to a prior art reference in the section titled "cleaning articles" and thus cannot provide antecedent basis for "a protrusion" as recited in the claims of the instant application. In response, Appellants' disclosure incorporates by reference U.S. Patent Application Ser. No. 10/197763, filed July 18, 2002 by Fearing et al. which provides support for the term "protrusion" (see e.g., Specification page 1 line 30 – page 2, line 1). In addition, Webster.com defines the word "protrusion" as "something. . . that protrudes" (<http://www.merriam-webster.com/dictionary/protrusion>) and Webster.com defines the word "protrude" as "to jut out from the surrounding surface or context" (<http://www.merriam-webster.com/dictionary/protrudes>). Fig. 1 of the present application, element 44, shows a protrusion that clearly meets Webster.com's definition. For at least these reasons, antecedent basis is properly provided, and the Examiner should remove this objection.

#### Conclusion

Appellants' invention would not have been contemplated without the use of the teachings of Appellants. In addition, Kacher not only lacks teaching of the Appellants' recited features, but further, the Examiner attempts to use impermissible hindsight to arrive at Appellants' invention, and any modification of Kudo to arrive at Appellants' invention would be unpredictable. Furthermore, Kacher teaches away from Geim and Fearing.

For at least these reasons, the rejections of claims 1, 3 - 5, 7-16 and 20-51 have been overcome. Appellants respectfully request that the Board reverse the rejections.

Appellants had previously paid a \$500 fee (fee code 1402) for filing an Appeal Brief in this case on May 14, 2007. Since prosecution was reopened prior to a decision on the merits by the Board of Patent Appeals and Interferences, this fee should be applied to the current appeal pursuant to MPEP 1207.04.



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The fee designated in 37 C.F.R. 41.20(b)(2) for filing this Appeal Brief is now \$540.00 (fee code 1402). Thus, please charge \$40 (the difference between the increased fee and the amount previously paid) to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875. Any additional prosecutorial fees which are due may also be charged to deposit account number 11-0875. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such extension is requested and should also be charged to our Deposit Account 11-0875.

The undersigned may be reached at: (920) 721-4405

Respectfully submitted,

JEFFREY D. LINDSAY ET AL.

By: 

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**Claims Appendix**

The claims on appeal are:

1. A disposable absorbent article comprising a nanofabricated attachment means comprising adhesive hairs disposed on a flexible substrate wherein said hairs are effective to adhesively engage an opposing surface comprising a polymeric film or a fibrous web, wherein the attachment means has a packing density of at least 500 hairs per square millimeter, and wherein the hairs do not consist of a spatula or protrusion positioned at a terminal end of the hairs.
3. (original) The article of claim 1 wherein said hairs have an average diameter of about 50 microns or less and an average height-to-diameter ratio of about 3 or greater.
4. (original) The article claim 1 wherein said hairs are effective to adhesively engage an opposing surface comprising a polymeric film or fibrous web with an average adhesive force of 10 nanoNewtons or greater per hair.
5. A disposable absorbent article comprising a gecko-like adhesive fastener including a flexible substrate, a plurality of adhesive hairs rising from said substrate, said adhesive hairs each having a base section, a midsection, a top section, a height of about 0.5 microns to about 8 millimeters, and a diameter of about 0.05 microns to about 50 microns, wherein the hairs do not consist of a spatula or protrusion positioned at a terminal end of the top section.
7. (original) The article of claim 5 wherein said hairs have a height of about 2 microns to about

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1000 microns.

8. The article of claim 5 wherein said hairs have a diameter of about 0.05 microns to about 10 microns.
9. The article of claim 5 wherein said hairs are spaced apart by a first distance of about 1 micron to about 1000 microns.
10. The article of claim 5 wherein said hairs are spaced apart by a second distance of about 1 micron to about 1000 microns.
11. The article of claim 5 wherein the ratio of a first distance between said hairs to the diameter of said hairs is about 3 to about 100.
12. The article of claim 5 wherein the ratio of a second distance between said hairs to the diameter of said hairs is about 3 to about 100.
13. The article of claim 5 wherein the ratio of the height of said hairs to the diameter of said hairs is about 2 to about 1000.
14. The article of claim 5 wherein at least one of said hairs is perpendicular to the plane of said substrate.
15. The article of claim 5 wherein at least one of said hairs is oriented at an angle between 0° and 90° to the plane of said substrate.

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16. The article of claim 5 wherein at least one of said hairs is axisymmetric.
20. The article of claim 5 wherein at least one of said hairs is hollow.
21. The article of claim 5 wherein said at least one hair comprises hollow materials, microspheres, carbon nanotubes, zeolites, or combinations thereof.
22. The article of claim 5 wherein said hairs comprise molecules with hollow chambers.
23. The article of claim 22 wherein said molecules are cyclodextrins, crown ethers, polyhedral oligomeric silsequioxanes, or combinations thereof.
24. The article of claim 5 wherein said substrate is apertured.
25. The article of claim 5 wherein said substrate is a liquid impervious web.
26. The article of claim 5 wherein the thickness of said substrate comprises a repeating pattern of thickness variations.
27. The article of claim 5 wherein said substrate is creped, embossed, apertured, coated, or combinations thereof.
28. The article of claim 27 wherein said coating is on at least one side of said substrate.
29. The article of claim 27 wherein said coating is hydrophobic.

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30. The article of claim 27 wherein said coating is hydrophilic.
31. The article of claim 27 wherein said coating is a metal oxide.
32. The article of claim 27 wherein said metal oxide is titanium dioxide treated with a UV absorbing material that is thermally treated.
33. The article of claim 5 wherein said substrate comprises regions of elastic material.
34. The article of claim 5 wherein said substrate is substantially elastic and homogeneous.
35. The article of claim 5 wherein said substrate contains discrete elastic regions separated by less elastic regions.
36. The article of claim 5 wherein said substrate contains discrete elastic regions separated by inelastic regions.
37. The article of claim 5 wherein said fastener is stretchable.
38. The article of claim 5 wherein said fastener comprises elastic regions.
39. The article of claim 5 wherein an attachment surface of said fastener is elastic, inelastic, or combination thereof.
40. The article of claim 5 wherein said fastener is adapted for fastening said article to itself.

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41. The article of claim 5 wherein said fastener is adapted for fastening said article to another object.
42. The article of claim 5 wherein said fastener is adapted for joining two or more components of said article.
43. The article of claim 5 wherein said fastener comprises part of a side seam of said article.
44. The article of claim 5 wherein said fastener comprises a three-dimensional topography characterized by a series of peaks and valleys.
45. The article of claim 44 wherein said peaks and valleys alternate in a first direction.
46. The article of claim 44 wherein groups of hairs are selectively disposed on said peaks of said substrate, said valleys of said substrate, or combination thereof.
47. The article of claim 5 wherein said hairs are protected from contamination with other materials until pressed into contact with an opposing surface.
48. The article of claim 5 wherein said hairs are protected with a removable cover.
49. The article of claim 5 wherein said fastener comprises substantially hair free regions between groups of hair.
50. The article of claim 5 wherein said hairs are disposed substantially uniformly along the fastener.

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51. The article of claim 5 wherein said hairs are disposed substantially randomly along the fastener.

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**Evidence Appendix**

None

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**Related Proceedings Appendix**

None